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ABSTRACT

Naturalistic second language (L2) acquisition (i.e., L2 acquisition without classroom instruction) does follow ordered developmental sequences. These L2 developmental sequences need not be completely identical to the respective first language (L1) sequences. The L2 sequences involve some utterances which on the surface match certain phenomena familiar from L1 developmental sequences. Other L2 structures have no surface parallel to L1 and seem to be based on prior L1 knowledge. Therefore, the view that there is one universal developmental sequence for the acquisition of a language irrespective of whether it is acquired as L1 or L2 is inaccurate. These developmental sequences differ according to the child's prior L1 knowledge. The major part of the data for this study derives from systematic longitudinal observations of children with German as L1 acquiring English as their L2, as well as children with English as L1 acquiring German as their L2. (Author/CFM)

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Developmental Sequences in Naturalistic L2 Acquisition

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Abstract

The main points of this paper are: Naturalistic L2 Acquisition does follow ordered developmental sequences. These L2 developmental sequences need not be completely identical with the respective L1 sequences. The L2 sequences involve utterances that - on the surface of them - match certain phenomena familiar from L1 developmental sequences. Other L2 structures have no - surface - parallel to L1. They seem to be based on prior L1 knowledge. Consequently, I reject the view that there is one universal developmental sequence for the acquisition of a language irrespective of whether it is acquired as L1 or L2. These developmental sequences differ according to the language background, i.e. prior L1 knowledge, of the child.

I shall look at the L2 acquisition of phonology, inflection, and negation. The major portion of the data derive from systematic longitudinal observations of children with German as L1 acquiring English as their L2, as well as children with English as L1 acquiring German as their L2.

0. Purpose

When in the late 60's and early 70's I was drafting the outlines of my - now - Kiel project on language acquisition, it became obvious that there was a big gap in the activities of the field. Past and ongoing research was concentrated on L1 acquisition and foreign language teaching. Apart from Ravem 1968, 1969, 1970, and oldtimers as, for instance, Kenyeres 1968, there were no modern studies on naturalistic L2 acquisition, i.e. L2 acquisition without the benefit or obstruction from school room instruction. It seemed to me then that if we were ever to get at the mysteries of foreign language teaching, we would have to, at least heuristically, single out different types of language acquisition, such as L1 acquisition, naturalistic L2 acquisition, L2 teaching, etc. This, it was hoped, would lay bare the child's own contribution to classroom language teaching. Moreover, I thought this was one way to find out to which extent language acquisition of whatever type did, in fact, proceed according to universal principles common to all acquisitional types (Wode 1974c). One simply cannot tell, if, for instance, naturalistic L2 acquisition and foreign language teaching are lumped together as in so many studies, recent and less recent (ranging from Valette 1964 to Selinker 1972, and Dulay & Burt 1974). Any claim about the identity of any acquisitional types should be the outcome, if any, of such studies, and not their premise.

In 1972 I learned that Evelyn Hatch and Roar Ravem had for some time been very active in research on naturalistic L2 acquisition. Since then interest has spread. And it seems to me that now we can notice a sobering swing away from theoretical speculations towards data-orientated empirical research based on - fairly - sophisticated - linguistic assumptions.

The major issues relating to naturalistic L2 acquisition, as I see the field today, still are:

a) is L2 acquired in a developmental sequence?

b) is there an ordered sequence of stages?

c) are the developmental sequences the same for L1 and L2?

d) what are the variables governing this sequence?

1. to which extent does the child rely on prior L1 knowledge?

2. to which extent does his developmental sequence reflect the structure of the L2 target language?

3. what are the processes and strategies that the child uses to acquire L2?

4. to which extent are the processes applied in the acquisition of L2 identical with those used to master L1?

5. do all children apply the same universal set of processes and strategies?

It seems to me that the available evidence, in particular the data to be presented below, will allow us to adopt an affirmative view towards points (a-b). As for point (c), there are those like Hatch & Wagner-Gough 1975, Dulay & Burt 1974, who lean towards expecting the same developmental sequence for a language like English irrespective of whether it is acquired as L1 or L2. I shall disagree. My data force me to conclude that the L1 and L2 sequences for a given language may differ. Furthermore, I am sure that L2 children do rely on prior L1 knowledge (d1). However, it seems to me that the crucial issue is not whether children fall back on L1 knowledge; rather, the issue is to which extent and under which conditions this is done. In the §§ to follow it will become apparent that L1 knowledge/structures will lead to interference only under specific structural conditions.

Points (d 3-5) have, more than any other of the points above, captured the interest of researchers. I think that as yet, we do not have either the type, or the variety, of data to go beyond highly tentative global guesses.

1. Data and Data Collecting: The Kiel Project on Language Acquisition

The data that I shall chiefly rely on come from my Kiel University, Germany, project on language acquisition. It is a long-range endeavor aiming, ultimately, at an integrated theory of language acquisition. This theory is to describe, and to interrelate, the various acquisitional types, such as L1 monolingualism; L1 bilingualism; naturalistic L2 acquisition; L2 acquisition under formal teaching conditions; and others. (For details cf. Wode 1974c). For a year or two our focus has been on naturalistic L2 acquisition. We attempt to contrast systematically the acquisition of two different languages acquired as L2. The languages chosen are German and English. We have, at present, data both from children with English as L1 acquiring German as L2; and from children with German as L1 acquiring English as L2. The age range is, roughly, from 3;4 - 9;6.

The combinations yield two L2 acquisitional types: L2 German/L1 English, and L2 English/L1 German. In either case we try to look at the data from several points of view. The L2 data for each language are compared with the respective L1 data. This provides hints as to differences or similarities for the L1 vs. L2 acquisition of a given language. Then we compare the L2 data for both languages as to differences and parallels. This, we hope, will provide clues as to the general principles that may govern naturalistic L2 acquisition. Eventually, we should be able to use these insights to decide whether and to which extent L1 and L2 acquisition follow the same general principles. (For a more detailed discussion of the issues involved cf. Wode 1974c).

Throughout the project we have found it useful not to rely on a rigid preplanned data collecting procedure. Instead, it has

been our experience that in order to get rich and insightful data, the methodology and the procedure have to be flexible enough to be adaptable to the type of child under observation. Some develop faster, others slower; some produce lots of data spontaneously, others need prompting.

For each L2 acquisitional subtype we have two sorts of data: hand-written notes taken spontaneously at the scene of action and including phonetic transcriptions, most likely child intentions, and other information; as well as many hours of tape recordings of spontaneous speech and of experimental sessions.

As for the informants, the data for L1 German come from my two children Lars, né 1969, and Inga, né 1971. These two together with their older brother Heiko, né 1966, and their sister Birgit, né 1967, are the subjects that have provided the data for L2 English. To get these data, the entire family of six moved to Trinity Center, Cal., for half a year in 1975.[1] It seems to me that this informant situation is as close as one can possibly hope to get for solving the problem as to which extent prior linguistic knowledge is exploited to acquire a second language.

For L1 English we rely on the literature. For L2 German/L1 English we have studied children whose parents have moved to the Kiel area for various reasons. We have extensive records on 4 children aged 3;4 - 7;6. (For further details on the design of the project, the data, the children, and some results cf. Wode 1974a-d, 1976a-c, Wode & Schmitz 1974, Wode & Rūķe-Draviņa 1976, Felix in prep., Felix 1975a-d, Lange 1975).

2. Some Illustrative Developmental Sequences

I shall outline three developmental sequences relating to different structural areas: phonetics-phonology for the acquisitional type of L2 English/L1 German; plural inflection for L2 English/L1 German; and negation L2 English/L1 German as well as L2 German/L1 English. I shall single out the acquisition of negation to discuss in more detail some differences between the L1 vs. the L2 developmental sequences. These comparisons, I think, will at least suggest in outline which kind of evidence a theory of naturalistic L2 acquisition will have to handle.[2]

2.1 L2 Phonology: L2 English/L1 German

The four children mentioned in § 1 did not acquire the local variety of Trinity Center English in a Jakobsonian type of developmental sequence (Jakobson 1941), nor in an approach reminiscent of the feature/process hypothesis implicit in Ingram 1974a-b. Instead, some segments/features were approached through the children's L1 phonological capacity, i.e. the state of development that their L1 German phonological system had reached at the time of their arrival in L2 territory. The second type of segment/feature was acquired in a way that is difficult, if not impossible, to relate in any direct way to the children's respective L1 phonological capacity. The first type of phonological elements comprises the stressed and unstressed vowels/vocoids , the syllabic and non-syllabic consonants/contoids except /r/ and, possibly, /w/. The acquisition of the latter two, especially /r/, was parallel to the developmental sequence when English is acquired as L1. I shall first illustrate the first type, and then deal with the second.

For the first type of phonological elements the children seemed to proceed along what in Wode 1976b-c I have termed equivalence relationships, and as set out in tab. 1. The chart is to imply

that the L2 target, as given in the left hand column of tab. 1, was regularly substituted by the children by a specific L1 element, i.e. the L1 equivalent to the L2 target. Such substitutions as in tab. 1 are, at least in part, familiar from foreign language teaching as well as from the numerous studies on languages in contact.

That, in fact, the children were relying on their prior L1 capacity in cases as summarized in tab. 1, can be illustrated most vividly via the substitutions for the L2 targets /θ, ð/. [θ, ð] do not exist as distirctive phonological elements in adult German. However, three of our children, Heiko, Lars, and Inga, had a lisp in the course of their L1 phonological development. By the time the family moved to Trinity Center, Heiko had overcome this without therapeutic treatment. With Lars and Inga the lisp was still strong. Lars used [θ, ð] as a substitute for German /s, z/, Inga for /ʃ, ʒ, s, z/. Inga employed the same substitutions for her L2 English. Lars' lisp was less consistent. There are many instances from him, where he was lisping in attempting the L2 targets /θ, ð/ as well as /s, z/. More telling, however, is this: When he talked German in Trinity Center, his lisp was as strong as ever. Among his early attempts at the L2 targets /θ, ð/, however, there are many instances where he did not lisp or where he struggled hard to avoid it, thus producing [s, z] or something very close to [s, z]. (For details cf. Wode 1976b).

The L2 target /r/ does not fit the above generalization. In Wode 1976c I have argued that the first regular non-Ø-substitute for the L2 /r/ in /r-V/ and /Cr-V/ environments is [w]. The next stage is marked by the use of a central frictionless continuant [ɹ]. Retroflex [ɻ]'s were noted only later. Cf. tab. 2.

Tab. 1 Some substitutions of L2 segments by L1 equivalents (based on Wode 1976b)[3]

Target L2	Child L2	Target L2 form	Child L2 form	Time of Exposure	Child
/ɪ/	[ɪ]	pitcher	$p^hɪt^hʃa$	0;6/23	Heiko
/o/	[o]	pushing	$p^hoʃɪŋ$	0;5/22	
/i/	[i]	please	p^hiz	1;11/59	
/ɛ/	[ɛ]	ready	ɹɛdi	1;11/58	
/æ/	[ɛ]	bat	p̊ɛt	0;12/79	
		thank you	θɛŋk^h ju	0;9/47	Inga
		catch	$k^hɛt^hʃ$	1;16/519	Birgit
		catch	$k^hɛt^hʃ$	1;16/519	Lars
/ʌ/	[a]	some one	sam wan	0;12/77	Heiko
		come on	k^ham ɔn	0;13/86	Inga
		this one	tɪθ wan	0;19/136	Lars
		shut up	ʃatap	0;26/201	Birgit
/w/	[v]	sandwich	sɛ·ntvɪt^{h}ʃ	0;7/27	Heiko
		Weaverville	vivavɪl	1;8/337	Inga
		wet	vɛt	1;8/353	Birgit
/θ/	[s]	thank you	sɛŋk^h ju	0;15	
		three		0;23	Lars
/ɬ/	[l]	Bill Hill	p̊ɪl hɪl	0;12/74	Heiko
		please milk	βlɪθ molk	0;14/98	Inga
		little	lɪtl	0;26/202	Lars
		cold	k^hool	0;28/236	Birgit
/ə^r/	[a]	river	ɹɪva	0;13/88	Heiko
		(Trinity) Center	θɛnta	0;5/17	Inga
		(Trinity) Center	θɛnta	0;5/16	Lars
		Carpenter	$k^hɔ^ep^hɛnta$	0;14/93	
		Weaverville	vivavɪl	1;9/360	Birgit

Tab. 2 Developmental types in the acquisition of L2 target [ɹ]/[ɻ]

I: Substitution by uvular [R]

L2 form	Child L2	Time of Exposure	Child
Redding	Rɛdɪŋ	0;12/61	Heiko
right here	Raɪtʰɪa	0;24/176	Lars
Trinity Center	tʰRɪnɪtʰɪ θɛnta	0;5/17	Inga
drink	dRɪnk	0;28/244	Birgit

II: Substitution by [w]

---	---	---	Heiko
Craig	kʰwɛ·k	0;5/15	Lars
Craig	kʰwɛɪk	0;5/18	Inga
Craig	kʰwɛk	1;8/357	Birgit

III: Substitution by a central frictionless continuant [ɻ]

(home) run	ɻan	0;6/23	Heiko
Grief	kɻɪf	0;18/124	Lars
friend	fɻɛ·nt	1;28/793	Inga
crickets	kʰɻɪkʰɪtʰs	2;8	Birgit

IV: L2 target-like retroflex [ɹ] proper

Swift Creek Trail	swɪft tʰkʰɹɪk tʰɹɛɪl	1;7/326	Heiko
strike	stɹaɪk	1;25/758	Lars
Craig	kʰɹɛɪk	3;0/1618	Inga
Redding	ɹɛdɪŋ	3;8	Birgit

I am still undecided on how to interpret the L2 sequencing of [ɹ] vs. [ɻ]. Many local speakers including many local children had [ɹ], others had [ɻ], and many had both. In numerous instances it was impossible to tell whether the /r/ was retroflex or not. I am not sure whether the children first had [ɹ] as an intermediate developmental stage towards [ɻ]; or whether [ɹ] and [ɻ] are developmentally unrelated. This latter alternative would imply that our L2 children's [ɹ] and [ɻ] are reflexes of differert L2 targets.

There is one exception to the acquisition of /r/, and, I think, it is especially telling. Birgit at first had the occasional [w] in her L2. But her favorite was uvular [ʁ], as she uses for L1. Though no foreign language teaching was involved in the whole experiment, Birgit was allowed to take part in the reading and writing activities of the first graders, because she wanted to. The reason being that Trinity Center has a two-school-room elementary school. Birgit was in the class with grades 1 - 4. However, once school had recessed after we had been there for two months, Birgit gave up her preference for uvular [ʁ], and reverted to the [w] substitutions. Then she continued through the same developmental sequence as the three other children had done or were doing. (For details on the acquisition of /r/ cf. Wode 1976c.)

2.2 L2 Inflections: L2 English/L1 German Plural Inflection

The irregular plurals of English were the last to arise with our children. In fact, only Heiko got to the stage where, towards the end of our stay, he had two or three nouns for which he did not form the plural by adding [-s, -z, -əz, -əs]. As for the developmental sequence of the regular plural, it will not do to simply list the allomorphs in the order in which

they appeared with the children. There are more regularities to it than that. They will become apparent if the children's intentions are looked at separate from the developmental sequence governing the acquisition of the allomorphs.

Stage I: One form for both pl. or sg. intention

In the beginning most nouns showed no reflex of target plural inflection. A few others like, for instance, guys, did. With these, however, there was no form reflecting the non-inflected target. Whether the forms occurred with or without overt plural reflex, these nouns were monomorphemic to the children. They had but one form.

Stage II: Two forms reflecting target singular and plural: singular reflexes used with both singular or plural intention; but with plural reflexes restricted to plural intention.

Stage III: Plural-reflexes restricted to plural intention; singular-reflexes to singular intention.

Nouns now had two forms, like, for instance, hook and hooks, i.e. reflecting pl. and sg. target inflection. Forms with sg. target reflexes are used with sg. intention; forms with pl. target reflexes are restricted to pl. intention.

The Allomorph Sequence

Stages I - III mark the acquisition of the principle of plural formation. Tied into these stages is the sequence in which the pl. allomorphs /-s, -z, -əz/ are acquired. The first to be used productively starting, roughly, at stage II above, is [-s], next is [-əs]. [-z] and [-əz] are the last to arise.

The reason for the late appearance of [-z, -əz] is very likely not an inflectional one, but rather a more general phonological one, namely the final devoicing rule of German. In German final fricatives and plosives are voiceless. In English they may be voiced or voiceless. It takes all four children a long time to acquire this L2 phonological rule. The pl. allomorphs begin to be voiced at approximately the time that voiced fricatives and plosives appear finally elsewhere, too.

The blunders committed by the children are uniform. They never made any mistakes as regards the distribution of [-s, -z] vs. [-əs, -əz]. [-s, -z] were never attached to nouns ending in /-ʃ, -ʒ, -s, -z/; and, likewise, if such nouns were inflected, they always had [-əs ~ əz]. This is not to say that blunders did not occur. There were plenty of them. But all are due to inappropriate identification of final target inflectional /-s, -z/'s as part of the stem or by adding [-əs ~ əz] to nouns that should have Ø-inflection. Some instances are (1).

(1)	guyses	[gaɪsəs]	'guys'
	fishes	[fɪʃəs]	'fish'
	basses	[bæsəs]	'bass'
	nutses	[nat^{h}səs]	'nuts'
	gooses	[gusəs]	'geese'

Likewise, the only type of blunder that I have noted with the children's handling of [-s, -z] is due to the fact that they failed to single out those target nouns that do not take the [-s, -z] plural but, for instance, Ø. Note (2)

(2)	trouts	[t^{h}ɹaot^{h}s]	'trout'
	foot	[fot^{h}s]	'feet'
	feet	[fɪt^{h}s]	'feet'
	sheeps	[ʃip^{h}s]	'sheep'
	cattles	[k^{h}ætɪs]	'cattle'

The L2 developmental sequence for the regular plural is not totally unlike that known for L1 (Berko 1958, Cazden 1968, Brown 1973). In the Berko study /-əz/ is the last to arise. /-z/ and /-s/ are differentiated from the outset. This is probably due to the fact that the L1 children, at the time Berko did her experiments, had already acquired the phonological rule relating to the voiced vs. voiceless final fricatives. Also, the developmental stages I-III are closely paralleled by L1 (cf. Cazden 1968).

Scholars who prefer to explain L2 acquisition in terms of interference will be disappointed. Apart from the general phonological rule, relating to final voiced vs. voiceless fricatives, there is no evidence for interference at all. This is even more striking if one recalls the tempting interference possibilities that a child with German as L1 might have at his disposal. Standard German has a variety of pl. formation rules. There is, for instance, the (e)n-plural (Frau : Frauen); Umlaut (Kuh : Kühe); Ø-plural (Mädchen : Mädchen); s-plural (Auto : Autos); and others. But, in fact, there is not a single instance in the whole data where a child produced a plural like, for instance, [fyt] as the plural for foot in analogy to German Fuß : Füße.

However, one should not jump to the general conclusion that there will be no interference in the L2 acquisition of any type of inflection. I have noted consistent blunders, for instance, with the possessive inflection. Cf. (3).

(3) Butch's car [bʊtʰʃs]...
Jinx' car [dʒɪnkʰs]...
Des' car [dɛs]...

It took our children quite a while before they used the appropriate [əz ~ əs] in cases like (3). In German, in contrast to English, inflected forms like (3) would be correct.

But why is it that at the same time, the same morphological L2 rule should be followed appropriately for the pl inflection but not for the possessive inflection?

2.3 Negation

This § will be more detailed, because I want to use the acquisition of negation to illustrate some of the difficulties that have to be overcome in determining the regularities that seem to govern L2 developmental sequences. The data for L1 English and L1 German as well as for the two L2 acquisitional types are set out in tab. 3-4. I have listed only the major early stages. For the L1 data cf. Wode 1976a, Wode & Schmitz 1974, Klima & Bellugi-Klima 1966, Bloom 1970; for the L2 data on German cf. Lange 1975, Felix in prep. The data on L2 English stem from my field trip to Trinity Center (§ 1).

Even cursory inspection of both the data for L1 and L2 of tab. 3-4 will reveal that there are, or may be, ordered developmental sequences for both acquisitional types. For L1 it was obvious to me from the start of our project that the developmental sequences will differ according to the structure of the target language. For instance, utterances like L1 English Kathryn no like celery (tab. 4, III) have no direct parallel in L1 German. (For details cf. Wode 1976a, Wode & Rūķe-Draviņa 1976)

When in 1974 our data on L2 German were coming in, I was struck by two observations. These L2 German developmental sequences were ordered; and the developmental stages and the various utterance types were very similar to L1 German. In fact, the few differences that did show up, made me suspect that we might have missed something for L1 rather than L2. The differences are: nein in medial position as in L2 German Katze nein schlafen (III of tab. 3). But so far we have had only one L2 child who had - a few - examples of this type. The other

Tab. 3 Developmental sequences for L1 German vs. L2 German/L1 English

	L1 German	L2 German/L1 English (Lange 1976)
I - IIa	nein 'no'	nein 'no'
II	nein, Milch 'no, milk'	nein, da 'no, there'
IIb	nein hauen 'no bang (= don't bang on the table)'	nein helfen 'don't help me'
III	Honig gibt nicht 'there is no honey'	das ist nicht schöner mit das 'this is not nicer with (=than) that'
	Heiko nicht essen 'Heiko is not to eat anything'	Milch nicht da 'milk not there'
	die nicht kaputt 'they are not broken'	nicht deine 'not yours'
	nicht Rasen don't step on the lawn'	nicht fahren there 'not (= don't) drive there'
	Britta nicht 'Britta is not to do it'	nein, das nicht 'no, that not'
IV	Holger kriegt nicht ein Lutscher 'Holger is not to get a lollipop'	das nicht eine Schaf 'that not a sheep'

Tab. 4 Developmental sequences for L1 English vs. L2 English/L1 German

	L1 English	L2 English/L1 German
I - IIa	I no	no no, you
IIa	no, Mom	
IIb	no close 'don't close the door'	no play baseball 'let's not play baseball'
III	Kathryn no like celery Kathryn not quite through I can't open it	
IIIa		1) that's no good 2) lunch is no ready 3) I got nothing shoe 4) John go not to the school 5) I can no play with Penny 6) I cannot hit the ball
b		I didn't see
c		I didn't can close it
IVa	you don't want some supper	don't say something
b	I am not scared of nothing	don't tell nobody

children used nie /ni/ for 'nicht'; a third had both nicht and nie for 'nicht'. nie in adult German is 'never'. To my knowledge, no L1 child with nie for 'nicht' is on record yet.

However, when the data for L2 English/L1 German were in, the situation began to look different. These data support the view that L2 acquisition follows developmental sequences, and that these sequences are ordered. They disconfirm the idea that L2 and L1 acquisition are wholly parallel. Apparently, there may be parallels, like, for instance, I-IIb and IV of tab. 4; but there may also be differences, as in III of tab. 4. Differences of this sort, I think, are due to the structure of L1, i.e. the child's prior linguistic knowledge. What is fascinating about this insight is not that L2 children should rely on prior L1 knowledge; but that, apparently, they do so in highly restricted ways, i.e. only at specific points in their development are they liable to fall back on L1. Apparently, specific conditions relating to the structure of the languages involved have to be met for interference from L1 to take place at all. I shall explore this lead in a preliminary fashion in the following §.

3. The Genesis of a L2 Developmental Sequence: L2 English/ L1 German Negation

Data as in tab. 3-4, it seems to me, are, above all, a challenge to devise an appropriate theory of L2 acquisition. The kind of theory that I have in mind should not be one that speculates post hoc whether a given "error" is due to "interference" or not. A theory of L2 acquisition should aim at predictive power. That is, it should be formulated in such a way that it will be possible to predict the developmental sequences for, for instance, L2 English/L1 German, L2 English/L1 Japanese, L2 English/L1 Norwegian, etc. (For some L1 attempts to devise such theories for specific structural areas cf. Wode 1974b and 1974d, for interrogation; Wode & Schmitz 1974, Wode 1976a, for negation.) Amongst other things such a L2 theory would have to handle the differences between L1 and L2 acquisition. The job essentially amounts to answering points (a-c) of § 0.

Obviously, it is no help at all if these points are answered in a grand way by claiming that, for instance, L1 and L2 acquisition are not the same; that the child does exploit L1 knowledge; and that processes like overgeneralization are involved. In all cases, we have to be, and we can be, much more specific as to what type of, and under which conditions, prior linguistic knowledge is made use of. Likewise, it is not enough to claim that overgeneralization occurs in L2 acquisition. We cannot make any predictions about developmental sequences unless we know under which circumstances, i.e. at which point in a developmental sequence overgeneralizations are likely to occur. It seems to me that what we need above all is detailed information on how many variables interact. I shall briefly go through the developmental sequence for L2 English/L1 German negation to illustrate the complexity of these interactions.

The point of this § is not to arrive at a, perhaps, tentative theory for the L2 acquisition of negation. This cannot be

done at present, because of lack of appropriate contrastive data. I shall content myself with two things: to show how complex the interaction of the various processes and strategies is; and to illustrate that L1 knowledge is apparently drawn on only at specific points in the developmental sequence(s).

For many stages there will be several explanatory alternatives. In most cases no attempt can be made to single out one alternative as definitely correct. To do this would require, again, appropriate contrastive data from L2/L1 types structurally different from those which we have to date. The aim of this §, therefore, is to illustrate the variety of alternatives that, apparently, have to be reckoned with, and to show how the various regularities may interlock for a given developmental stage. The procedure, therefore, will be to compare, stage by stage, L2 English/L1 German with L1 English as set out in tab. 4. Across the four children there will be commonalities as well as individual variations. They are discussed in separate §§.

3.1 Developmental Commonalities

In contrast to L1 English, we do not have any convincing evidence to suggest that the structural types I and II of tab. 4 are developmentally ordered for L2. Morphophonologically both types must relate to English. However, whether the word order of IIa is a reflex of English or of German, cannot be decided since, intonation aside, the structure is the same for both languages.

IIb is without parallel in target English or German. Nonetheless the developmental type IIb is superficially the same for L1 and L2. Both seem to be overgeneralizations from IIa; but it cannot be decided whether the overgeneralization in L2 English IIb is due to target English or whether it relates in some way to German.

The commonality of L2 IIIa is that the negative element is placed after the verb. Adult German has such a general rule; adult English does not. In English, the negative element is placed after the auxiliaries. If there are none, do-support is required with neg positioned in front of the full verb. It is hard to say just what the children did with respect to the placement of the negatives in L2 IIIa. If we want to give credit to prior L1 knowledge, we would have to claim that the children applied their German rule. This would lead to correct placement of the negatives in L2 utterances containing an auxiliary (IIIa 1-2, 5-6); it would lead to blunders in utterances lacking an auxiliary (IIIa 4).

Alternatively, we might argue that the L2 types IIIa were acquired by relying directly on English. The first utterances of this type, i.e. IIIa 1 have neg after reflexes of the copular be, i.e. 's (IIIa 1). Next, the usage is extended to utterances like IIIa 2. Utterances of this type cannot be based on English in the same way as IIIa 1, since the negative element is no instead of not~ -n't as required by the target. There would have been some generalization involved from stage IIIa 1 to IIIa 2. Type IIIa 3 is difficult to explain by relying exclusively on English. It turned up only with our two girls. IIIa 3 will be discussed in § 3.2, individual variations.

Still clinging to the alternative, that type IIIa goes back directly to English, we would have to claim with respect to IIIa 4 that utterances of this sort must be overgeneralizations of the types IIIa 1-2. This is awkward. No L1 children are known to have done this. Milon 1972 did not find this type for L2 English/L1 Japanese; but Ravem 1969 found it for two children with L2 English/L1 Norwegian. And, sure enough, Norwegian has much the same positioning rule as German.

Type L2 IIIb marks a real advance in that now neg appears in front of the full verb. At first, forms like didn't, don't are monomorphemic. This is closely parallel to L1 both position-wise and regarding the morphemic status of these negative forms. But note what happens next. In L2 IIIc the use of didn't, don't is generalized in such a way that these negatives appear also in front of auxiliaries. This type of structure has not yet been reported for L1 English. It seems to me that the children were generalizing both on L2 IIIa and L2 IIIb, thus still clinging to some properties of the German, i.e. L1, neg placement rule. German does not differentiate between auxiliaries and full verbs as regards the placing of nicht. In IIIc the children treat full verbs and auxiliaries alike, which is one basis aspect of the German rule. However, the advance as against IIIa 4 is that now neg appears in front of the verb, no matter whether auxiliary or full verb, which is not in accord with the German rule.

The L2 stages I-III as listed in tab. 4 do not exhaust every detail relevant to the developmental sequence that I have observed with the four children. Nor does type IIIc mark the end of their achievements. These developments will not be discussed here, for reasons of space. However, I have added two stages for the acquisition of the negative indefinites, like some: any: nothing; somebody: anybody: nobody; and the like. Here again, there is a close parallel with L1. At first, our children had structures like IVa. Note that the negative don't is at first combined with the positiv something, just as in L1. Next is double negation. And only then did our children consistently use the forms with any-. Neither German nor English can have provided the direct model for IVa-b. The children must have relied on some prior structure of their own. But which one? I shall deal with this problem in another paper.

3.2 Individual Variation within Developmental Sequences

The preceding section was focussed on the commonalities among the four children. This should not blind one to the fact that not all children proceed in exactly the same way. That is to say that though there are developmental sequences which seem to set the major stages of development, these developmental sequences do also allow for some degree of individual variation. And, consequently, any theory of L2 acquisition will not only have to handle the commonalities, but also the individual differences. To give some illustrations, I shall first go briefly through the L2 German developmental sequence of tab. 3. The examples come from four children aged 3;4 - 7;6.

For type III, David, aged 5;3, had some utterances with nein in medial position (ich nein essen, Katze nein schlafen, das nein Bauer). But he quickly turned to nicht in that position. Geoffrey, aged 3;4, used nicht the moment he got to stage III. Julie, aged 5;4, and Guy, aged 7;6, preferred nie [ni] in the sense of "nicht". David had both nie and nicht for "nicht". The form nie was not intended in the sense of "never", though if there is to be a German model, then it most likely should be nie "never".

Recall also, that only two of our four children with L2 English had type IIIa 3 of tab. 4. This type is hard to explain by relying exclusively on English. What comes to mind more immediately, is to relate this type to German kein. That is, in German we can say ich habe nichts 'I have nothing', which can be paraphrased under certain conditions as ich habe kein(e) 'I have none'. In English this is communicatively equivalent to utterances like I have nothing. This, in turn, may have led the children to equate nothing with L1 kein and to use it in contexts where German kein would be appropriate but where the analogy with English nothing breaks down - for English. In fact, only two of our four children had the structural type IIIa 3 of tab. 4.

4. Conclusions

I think the above data do suggest more than merely highly tentative hints in answer to at least some of the points (a-d) of § 0.

4.1 L2 Developmental Sequences (points (a-b))

I have no doubts that naturalistic L2 acquisition follows ordered developmental sequences. This insight is not at variance with other investigators' findings. In fact, the orderliness is such that, in the long run we should be able to devise a theory for L2 acquisition that will predict the course a L2 child will take, including the range of child idiosyncratic variations.

4.2 L1 = L2: The identity hypothesis (point (c)).

I find my own results and views in conflict with quite a bit of recent research. There are researchers like Corder 1967, Hatch & Wagner-Gough 1975, Dulay & Burt 1974, who hold, or lean towards, the view that L2 is acquired like L1. In Wode 1974c I have called this position the identity hypothesis. In particular Hatch & Wagner-Gough 1975 seem to have in mind that the L1 and L2 sequences should be the same in terms of the surface structure of the utterances that can be observed: The L1 sequence matches the L2 sequences; and the latter are the same irrespective of which language the child has picked up as L1 before. I think that this superficial version of the identity hypothesis must be rejected, but that the hypothesis itself might be maintained in a deeper sense.

L2 developmental sequences are not, on the surface of them, exactly like the respective L1 sequences. For example, L2

English IIIa 4 of tab. 4 with the negative element not following the full verb does not have any parallel in L1 English at all. However, type IIb does. The identity or non-identity between L1 and L2 can, therefore, not be found in the surface forms. Consequently, if the claim that L2 and L1 acquisition are the same is to be upheld, as I think it should for the time being, it can only be that L2 and L1 acquisition are governed by the same set of principles. These principles will lead to different surface forms depending on the total information the L2 child has at his disposal, i.e. depending, mainly, on the structure of the respective L1. Beyond this, I do not think that the question whether and in which way L2 acquisition is the same as L1 acquisition can, at the present state of our knowledge, be decided in any profound way. We do not yet have the proper data to decide the issue.

4.3 Prior L1 knowledge (points (d1-2))

A comparison between L2 German and L2 English suggests to me that L2 children, indeed, may, or always do, make use of prior L1 knowledge. Furthermore, I think we have all reason to believe that this is done in systematic ways. The real challenge seems to be to discover what the systematicity is. I think the major variable is the formal type of linguistic structures involved, both from L1 and L2.

The types of evidence to come to grips with include studies like Milon 1972 and the material reviewed in Hatch & Wagner-Gough 1975. Both studies report no (noticable?) reliance on L1. But the data of this paper do suggest just that. For instance, the L2 negation type IIIa 4 of tab. 4 is not attested in Milon 1972. I suspect that this is due to the structure of the languages involved. Only if L1 and L2 have structures meeting a crucial similarity measure, will there be interference, i.e. reliance on prior L1 knowledge. For

instance, Norwegian and German have much the same positioning rule for neg. As already pointed out in § 3.1, Ravem 1969 did find the L2 type IIIa 4. More than that, he also has an instance of type L2 IIIc of tab. 3. This type, too, didn't turn up in Milon 1972.

Unfortunately, we do not yet have the appropriate data to warrant speculations as to what constitutes the essentials of this crucial similarity measure in terms of the - formal - types of linguistic devices used in natural languages. (For a first attempt relating to the acquisition of the various "r" s cf. Wode 1976c).

4.4 Processes Involved in L2 Acquisition (points d3-5)

I have been unable. so far, to identify any language acquisition process for which I cannot think of some parallel phenomenon from L2 acquisition, at least with a little bit of imagination. Overgeneralization, for example, which hardly any discussion on L2 acquisition, whether school room or naturalistic, fails to mention, can be documented both in L1 and L2 developmental sequences.

What is needed is much more detailed precision. Above all, the psychological correlates of such processes/strategies have to be investigated on the basis of close inspection of language data. It will not do to come up with principles such as, for example, Slobin 1973 has suggested for L1 acquisition. What use is there to tell the child to "pay attention to the end of words"? Such principles/advice will have to be ordered developmentally if they are to allow both child and investigator to use them as guide lines for progress. Not until we have this type of information will we be equipped to take a stand on point (d5) of § 0, i.e. whether all children are universally endowed with, or have at their disposal, the same set of principles, processes, and strategies.

5. Summary and Outlook

To sum up: I have no doubt that L2 acquisition in a natural setting proceeds according to specific principles. These principles account for the high amount of uniformity across children with the same language background acquiring the same L2. These probably universal principles must be such that apart from the commonalities reflected in developmental sequences, there must be room enough to allow children to proceed according to certain individual idiosyncracies. It seems premature to me to speculate on the precise nature of these principles. And also on the precise way in which these principles interact to produce such ordered developmental sequences as illustrated here. However, I have no doubt that it will not simply do to list the set of principles. The main task is, if a theory of second language acquisition is to have any predictive capacity at all, to state the conditions which have to be met for a given principle to be applicable by the child. Furthermore, we have to state the conditions that obviously have to be placed on the information available to the child if it is to make use of this information at all. Recall, for example, that the devices used for plural formation in both English and German are - formally - inflectional in type. But the specific pl. formation rules of German were not carried over to English. However, quite a few of the German regularities relating to the positioning of the negatives were apparently carried over to English. This seems to imply that certain conditions have to be met for what is commonly called interference to take place at all. Therefore the notion of interference has to be developmentalized it it is to provide any fruitful insights.

Notes

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3. The transcription is basically IPA: [R] uvular /r/; [ɻ] retroflex /r/; [ɹ] central frictionless continuant; [o̞] tense rounded back vowel slightly more open than [o]; the lax, front, rounded vowel as in German Köcher 'quiver', Knöchel 'ankle', Wörter 'words' is transcribed as [ø]; the vowel [ɔ] as in German Loch 'hole', komm 'come' is slightly closer than the British English vowel in not, pot, slot; raised ˜ above consonants indicates flapped articulations, as, for instance, with [t̃] in Betty.

As regards items with /ð, θ/ it should be noted that Lars and Inga had a lisp in their L1.

The time of exposure is given in months and days. Figures following / are project internal file numbers.

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